

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P170868

Luminaire Tested: **LDA4A28940D010TE LAR25NF 4LLWW1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P170868
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26102)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA4A28940D010TE LAR25NF 4LLWW1
Description: PORTFOLIO 4" Lensed Wall Wash, Self-flanged, 25° Narrow Flood Optic,
at 30° tilt
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2118.2 lumens
Efficiency: N/A
Efficacy: 47.6 lumens/watt
Spacing Criteria (0/90/45): 2.11 / 1.09 / 1.54
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

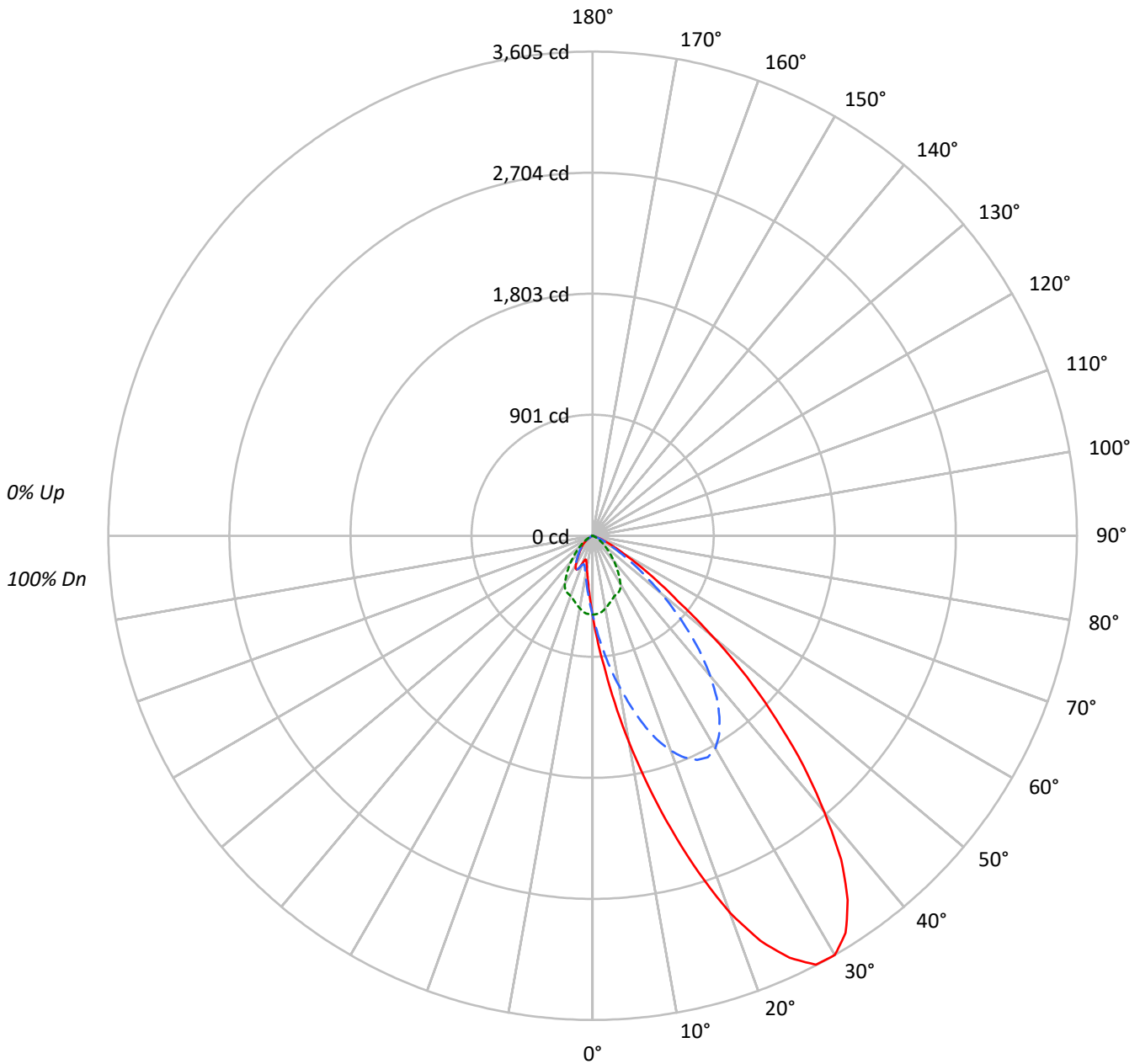
Input Watts (W): 44.49
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90																			
2	104	98	93	88	102	96	91	87	93	89	85	90	86	84	87	84	82	80																			
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71																			
4	90	80	73	67	88	79	72	67	77	71	66	74	69	65	72	68	65	63																			
5	83	73	65	60	82	72	65	59	70	63	59	68	62	58	66	61	58	56																			
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	52	50																			
7	72	60	53	47	71	60	52	47	58	52	47	57	51	47	56	50	46	45																			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40																			
9	63	51	43	38	62	50	43	38	49	43	38	48	42	38	47	42	38	36																			
10	59	47	40	35	58	46	39	35	45	39	35	45	39	34	44	38	34	33																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	72441	72441	72441
5°	120511	71863	45230
10°	195112	68724	30561
15°	288518	65138	23764
20°	391934	62612	28051
25°	471848	62850	38080
30°	513436	58908	35536
35°	498395	49615	28444
40°	431733	39948	23299
45°	336664	30788	19956
50°	223266	23008	15351
55°	124512	16903	9182
60°	65645	11224	3750
65°	35403	5633	409
70°	16914	1984	505
75°	5909	1334	667
80°	1989	1989	0
85°	5802	3963	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.6	3.0
10°-20°	247.2	11.7
20°-30°	508.5	24.0
30°-40°	607.3	28.7
40°-50°	448.5	21.2
50°-60°	188.8	8.9
60°-70°	46.4	2.2
70°-80°	6.4	0.3
80°-90°	2.5	0.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	818.4	38.6
0°-40°	1425.7	67.3
0°-60°	2062.9	97.4
0°-90°	2118.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2118.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	587	587	587	587	587	
5°	973	838	580	416	365	111
15°	2259	1450	510	232	186	663
25°	3467	1842	462	278	280	1586
35°	3310	1646	330	197	189	2030
45°	1930	1015	176	116	114	1482
55°	579	376	79	50	43	552
65°	121	83	19	4	1	132
75°	12	7	3	1	1	18
85°	4	4	3	1	0	4
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	20°	22.5°	25°
0°	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3
2.5°	763.7	754.1	754.1	756.8	765.1	758.2	752.7	747.2	752.7	740.3	744.4
5°	973.3	971.9	971.9	960.8	970.5	971.9	960.8	951.2	954.0	936.0	936.0
7.5°	1249.0	1240.7	1237.9	1222.8	1233.8	1232.4	1214.5	1198.0	1198.0	1169.0	1162.1
10°	1557.8	1546.7	1541.2	1521.9	1531.6	1526.1	1499.9	1475.0	1468.2	1426.8	1411.6
12.5°	1898.3	1891.4	1883.1	1858.3	1866.6	1855.5	1818.3	1782.5	1767.3	1712.2	1686.0
15°	2259.4	2270.5	2256.7	2227.7	2233.2	2213.9	2165.7	2116.1	2092.6	2018.2	1979.6
17.5°	2631.6	2645.4	2630.3	2597.2	2595.8	2569.6	2503.4	2442.8	2408.3	2313.2	2262.2
20°	2985.9	2990.1	2970.8	2934.9	2926.7	2890.8	2810.9	2725.4	2692.3	2575.1	2510.3
22.5°	3264.4	3279.6	3256.1	3229.9	3203.7	3158.3	3064.5	2970.8	2923.9	2790.2	2711.6
25°	3467.0	3501.5	3473.9	3443.6	3414.7	3360.9	3256.1	3155.5	3097.6	2948.7	2859.1
27.5°	3600.8	3633.9	3603.5	3569.1	3538.7	3476.7	3362.3	3265.8	3195.5	3032.8	2936.3
30°	3604.9	3644.9	3613.2	3576.0	3547.0	3485.0	3367.8	3268.5	3190.0	3027.3	2926.7
32.5°	3505.6	3537.4	3505.6	3473.9	3440.9	3381.6	3264.4	3169.3	3086.6	2930.8	2830.2
35°	3309.9	3337.5	3305.8	3268.5	3245.1	3192.7	3081.1	2990.1	2907.4	2764.0	2675.8
37.5°	3039.7	3064.5	3035.6	3014.9	2980.4	2933.6	2831.5	2750.2	2671.6	2542.0	2463.5
40°	2681.3	2733.7	2706.1	2692.3	2660.6	2620.6	2531.0	2459.3	2387.6	2274.6	2209.8
42.5°	2322.9	2372.5	2347.7	2338.0	2310.4	2276.0	2201.5	2140.9	2074.7	1981.0	1925.8
45°	1930.0	1982.4	1958.9	1954.8	1931.3	1905.2	1825.2	1793.5	1735.6	1647.4	1621.2
47.5°	1560.5	1570.2	1548.1	1549.5	1532.9	1515.0	1450.2	1430.9	1402.0	1334.4	1304.1
50°	1163.5	1170.4	1152.5	1158.0	1147.0	1135.9	1091.8	1082.2	1064.2	1018.7	1000.8
52.5°	800.9	832.6	820.2	825.8	820.2	816.1	798.2	781.6	773.4	744.4	736.1
55°	579.0	581.7	572.1	577.6	573.5	572.1	561.1	551.4	547.3	529.4	526.6
57.5°	401.2	403.9	403.9	401.2	399.8	397.0	390.1	384.6	381.9	377.7	369.5
60°	266.1	277.1	273.0	275.7	274.3	274.3	268.8	264.7	263.3	255.0	255.0
62.5°	182.0	188.9	186.1	187.5	186.1	186.1	182.0	179.2	179.2	177.8	173.7
65°	121.3	125.4	122.7	124.1	124.1	124.1	121.3	118.6	118.6	117.2	114.4
67.5°	77.2	80.0	78.6	80.0	78.6	80.0	77.2	75.8	74.4	74.4	73.1
70°	46.9	48.2	46.9	48.2	46.9	46.9	45.5	45.5	44.1	42.7	42.7
72.5°	24.8	26.2	26.2	26.2	26.2	26.2	24.8	23.4	23.4	23.4	22.1
75°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	11.0	11.0	11.0
77.5°	5.5	5.5	5.5	5.5	6.9	5.5	5.5	5.5	5.5	5.5	5.5
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	4.1	4.1	5.5	5.5	5.5	5.5	4.1
87.5°	5.5	5.5	5.5	5.5	5.5	5.5	5.5	6.9	6.9	5.5	5.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	27.5°	30°	32.5°	35°	37.5°	40°	42.5°	45°	47.5°	50°	52.5°
0°	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3
2.5°	733.4	726.5	723.7	718.2	711.3	707.2	703.1	704.4	694.8	687.9	678.2
5°	918.1	902.9	894.7	882.3	867.1	854.7	843.7	838.2	820.2	807.8	781.6
7.5°	1135.9	1109.7	1093.2	1071.1	1044.9	1022.9	1000.8	985.7	958.1	934.7	894.7
10°	1374.4	1334.4	1305.5	1272.4	1232.4	1196.6	1163.5	1135.9	1094.6	1058.7	1006.3
12.5°	1635.0	1578.4	1537.1	1488.8	1432.3	1382.7	1323.4	1291.7	1235.2	1185.6	1118.0
15°	1912.0	1837.6	1779.7	1713.5	1639.1	1572.9	1497.1	1450.2	1375.8	1312.4	1228.3
17.5°	2178.1	2084.4	2008.5	1924.5	1832.1	1746.6	1657.0	1590.8	1499.9	1421.3	1320.6
20°	2409.7	2298.0	2205.7	2103.7	1994.8	1890.0	1792.1	1703.9	1597.7	1505.4	1391.0
22.5°	2598.6	2469.0	2362.8	2244.3	2118.8	2000.3	1888.6	1788.0	1666.7	1564.7	1439.2
25°	2735.0	2593.0	2474.5	2343.5	2205.7	2070.6	1952.0	1841.7	1709.4	1600.5	1466.8
27.5°	2806.7	2656.5	2531.0	2390.4	2244.3	2103.7	1975.5	1858.3	1719.1	1604.6	1466.8
30°	2794.3	2641.3	2511.7	2367.0	2219.5	2078.9	1945.1	1828.0	1684.6	1568.8	1430.9
32.5°	2699.2	2548.9	2422.1	2281.5	2136.8	2000.3	1866.6	1753.5	1610.1	1497.1	1363.4
35°	2542.0	2400.1	2280.1	2146.4	2009.9	1881.7	1760.4	1646.0	1508.1	1400.6	1275.2
37.5°	2338.0	2208.4	2099.5	1975.5	1850.0	1734.2	1614.3	1516.4	1393.7	1293.1	1170.4
40°	2094.0	1979.6	1883.1	1772.8	1659.8	1559.1	1458.5	1363.4	1243.5	1153.8	1049.1
42.5°	1825.2	1727.3	1644.6	1548.1	1450.2	1364.8	1277.9	1195.2	1095.9	1014.6	916.7
45°	1535.7	1453.0	1385.4	1308.2	1226.9	1147.0	1083.5	1014.6	922.2	861.6	778.9
47.5°	1236.6	1173.1	1122.1	1062.9	998.1	948.4	887.8	832.6	765.1	708.6	641.0
50°	952.6	908.5	872.6	831.3	784.4	738.9	703.1	660.3	609.3	563.8	510.1
52.5°	704.4	675.5	653.4	625.9	594.2	570.7	537.6	505.9	467.3	432.9	391.5
55°	504.5	488.0	474.2	457.7	435.6	414.9	398.4	376.3	348.8	322.6	292.3
57.5°	362.6	344.6	343.3	325.3	317.1	301.9	286.7	270.2	250.9	233.0	210.9
60°	250.9	238.5	233.0	226.1	216.4	206.8	199.9	188.9	175.1	162.7	146.1
62.5°	169.6	161.3	158.5	155.8	147.5	143.4	135.1	128.2	118.6	108.9	97.9
65°	111.7	106.1	103.4	99.3	95.1	92.4	88.2	82.7	74.4	68.9	62.0
67.5°	70.3	66.2	63.4	62.0	57.9	56.5	52.4	49.6	44.1	41.4	37.2
70°	40.0	38.6	35.8	35.8	33.1	30.3	28.9	26.2	24.8	22.1	20.7
72.5°	20.7	20.7	19.3	17.9	16.5	16.5	15.2	13.8	12.4	11.0	11.0
75°	9.6	9.6	9.6	8.3	8.3	8.3	6.9	6.9	6.9	5.5	5.5
77.5°	5.5	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	2.8	2.8
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
85°	4.1	2.8	2.8	2.8	2.8	4.1	4.1	4.1	4.1	4.1	4.1
87.5°	4.1	4.1	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	57.5°	60°	62.5°	65°	67.5°	70°	72.5°	75°	77.5°	80°
0°	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3
2.5°	671.4	668.6	661.7	660.3	645.2	642.4	634.1	621.7	612.1	609.3	612.1
5°	772.0	759.6	738.9	734.8	710.0	701.7	683.8	664.5	647.9	638.3	634.1
7.5°	875.4	854.7	824.4	809.2	773.4	755.4	729.3	701.7	675.5	657.6	646.5
10°	974.6	941.5	886.4	874.0	829.9	800.9	765.1	727.9	694.8	670.0	652.1
12.5°	1068.4	1028.4	971.9	937.4	879.5	842.3	796.8	751.3	710.0	676.9	652.1
15°	1164.9	1112.5	1042.2	993.9	927.8	878.1	823.0	770.6	722.4	681.0	650.7
17.5°	1244.8	1180.0	1097.3	1039.4	962.2	902.9	839.5	778.9	726.5	679.6	645.2
20°	1304.1	1228.3	1134.5	1067.0	981.5	915.4	846.4	780.3	722.4	671.4	634.1
22.5°	1344.1	1257.2	1155.2	1080.8	991.2	919.5	845.1	776.1	716.8	664.5	624.5
25°	1363.4	1269.6	1163.5	1083.5	989.8	915.4	838.2	767.9	707.2	653.4	614.8
27.5°	1360.6	1261.4	1152.5	1068.4	973.3	896.1	817.5	747.2	687.9	634.1	594.2
30°	1320.6	1222.8	1112.5	1027.0	933.3	856.1	777.5	708.6	650.7	595.5	558.3
32.5°	1258.6	1158.0	1050.5	955.3	875.4	799.6	725.1	654.8	599.7	545.9	510.1
35°	1174.5	1078.0	974.6	893.3	806.5	733.4	661.7	595.5	543.1	490.8	457.7
37.5°	1076.6	984.3	889.2	805.1	729.3	661.7	594.2	534.9	482.5	435.6	403.9
40°	963.6	878.1	791.3	719.6	645.2	583.1	521.1	463.2	420.5	377.7	350.2
42.5°	840.9	765.1	686.5	624.5	556.9	501.8	442.5	401.2	359.8	321.2	299.1
45°	712.7	646.5	580.4	523.8	468.7	420.5	369.5	330.9	299.1	267.4	248.1
47.5°	585.9	529.4	475.6	430.1	381.9	341.9	306.0	271.6	241.2	215.1	199.9
50°	457.7	420.5	377.7	340.5	301.9	268.8	235.7	210.9	187.5	168.2	158.5
52.5°	357.0	322.6	288.1	257.8	230.2	202.6	180.6	159.9	143.4	131.0	124.1
55°	266.1	238.5	212.3	188.9	166.8	148.9	133.7	121.3	110.3	100.6	97.9
57.5°	190.2	169.6	151.6	133.7	119.9	108.9	99.3	91.0	84.1	77.2	75.8
60°	132.3	117.2	106.1	95.1	86.8	78.6	73.1	67.5	62.0	57.9	56.5
62.5°	88.2	80.0	71.7	66.2	62.0	55.1	52.4	48.2	45.5	41.4	40.0
65°	56.5	51.0	46.9	42.7	40.0	37.2	34.5	31.7	28.9	26.2	26.2
67.5°	34.5	30.3	28.9	26.2	23.4	22.1	20.7	17.9	16.5	16.5	15.2
70°	19.3	16.5	15.2	13.8	12.4	12.4	11.0	9.6	9.6	8.3	8.3
72.5°	9.6	9.6	8.3	8.3	6.9	6.9	5.5	5.5	5.5	4.1	4.1
75°	5.5	5.5	4.1	4.1	4.1	4.1	4.1	4.1	2.8	2.8	2.8
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
85°	4.1	4.1	4.1	4.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8
87.5°	4.1	4.1	4.1	4.1	4.1	2.8	2.8	2.8	2.8	2.8	2.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P170868

CATALOG NUMBER: LDA4A28940D010TE LAR25NF 4LLWW1

CANDELA DISTRIBUTION (continued):

	82.5°	85°	87.5°	90°	112.5°	135°	157.5°	180°
0°	587.3	587.3	587.3	587.3	587.3	587.3	587.3	587.3
2.5°	601.0	587.3	584.5	584.5	526.6	492.1	465.9	459.1
5°	614.8	595.5	585.9	580.4	477.0	416.3	376.3	365.3
7.5°	621.7	594.2	579.0	566.6	428.7	350.2	307.4	295.0
10°	619.0	585.9	565.2	548.7	384.6	299.1	255.0	244.0
12.5°	613.5	576.2	550.0	529.4	347.4	259.2	219.2	208.2
15°	607.9	565.2	534.9	510.1	317.1	231.6	195.8	186.1
17.5°	596.9	552.8	518.3	492.1	297.8	220.6	190.2	184.7
20°	584.5	539.0	503.2	477.0	292.3	231.6	213.7	213.7
22.5°	576.2	529.4	494.9	468.7	301.9	257.8	250.9	255.0
25°	565.2	521.1	486.6	461.8	311.6	278.5	274.3	279.8
27.5°	547.3	503.2	470.1	445.3	306.0	275.7	271.6	274.3
30°	511.4	468.7	439.8	413.6	284.0	255.0	248.1	249.5
32.5°	465.9	424.6	397.0	372.2	252.3	224.7	217.8	217.8
35°	416.3	377.7	351.5	329.5	221.9	197.1	190.2	188.9
37.5°	366.7	330.9	308.8	288.1	194.4	172.3	165.4	164.0
40°	317.1	285.4	264.7	248.1	170.9	153.0	146.1	144.7
42.5°	270.2	242.6	224.7	210.9	148.9	135.1	129.6	128.2
45°	223.3	201.3	187.5	176.5	129.6	115.8	114.4	114.4
47.5°	180.6	162.7	153.0	146.1	110.3	99.3	97.9	99.3
50°	144.7	132.3	125.4	119.9	93.7	84.1	80.0	80.0
52.5°	114.4	106.1	102.0	97.9	77.2	67.5	62.0	60.7
55°	91.0	84.1	81.3	78.6	60.7	49.6	44.1	42.7
57.5°	71.7	66.2	63.4	60.7	45.5	34.5	28.9	27.6
60°	53.8	49.6	46.9	45.5	31.7	20.7	16.5	15.2
62.5°	38.6	35.8	33.1	31.7	19.3	11.0	6.9	5.5
65°	23.4	23.4	20.7	19.3	9.6	4.1	2.8	1.4
67.5°	13.8	12.4	11.0	11.0	4.1	2.8	1.4	1.4
70°	6.9	6.9	5.5	5.5	2.8	1.4	1.4	1.4
72.5°	4.1	4.1	4.1	2.8	2.8	1.4	1.4	1.4
75°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4
77.5°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	0.0
80°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	0.0
82.5°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4
85°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	0.0
87.5°	2.8	2.8	2.8	2.8	2.8	1.4	1.4	1.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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— 0°-180° - - 45°-225° - - - - 90°-270°













(END OF REPORT)